gas and of the air multiplied by coefficients proportional to their weight. Now the ratio of the weights [1] in this case is equal to

1.81 X1.069^1.9349 = 37.26 per cent
2.525X1.29 3.2575 62.74 per cent

Therefore for Furnace No. 20, for example, the result is

For the air:
21.8X0.6274 = 13.6773
.For the gas:
29.6X0.3726=11.0290

The diagonal of the parallelogram for these two values is equal to 24 m 50 per second at an inclination of 27°. The results, which will be obtained for the other furnaces by similar computations, are given in the following table:

Number of Furnace	Average Angle *ex.*	Average Velocity *V.*
	Degrees	Meters per Second
20	27	24.00
21	29	21.20
23	33	17.30
24	25	24.50
25	29	21.00

Inserting the above values in the formula

?;^{2} sin^2 *a*

273+*,

with the values of *v* and *a.* given in the table and assuming that kn=1850° and that *H* equals the difference in level between the sill of the gas port and the tapping hole, the temperature *U* at which the stream of flame drops to the level of the hearth at the tapping hole may be computed as follows, in order to determine the temperature to which the gases filling the furnace must be

raised before it becomes possible to start making the bottom:

(1) It should be remembered that at 0° the volume per second of the gas is 1.81, and its specific weight is 1.069. The volume of the air is 2.525 and its specific weight 1.29.